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Dissertation on

Cynanche Trachealis or Croup

The disease which is the subject of the following Dissertation is placed by Dr Cullen under the order of Phlegmasiæ, class of Pyrexiæ, and by our Professor of the Practice among the diseases of the Respiratory Organs. It is defined by the former gentleman "an Inflammation of the Glottis, Larynx or upper part of the Trachea, whether it affects the membranes of these parts, or the muscles adjoining

It has been described by different authors under various names, as Angina Polyposa, Tracheitis Cynanche Trachealis, and the popular names of Croup and Hives

Cynanche Trachealis is considered as a disease of rather modern origin, and the honour of more particularly explaining its nature and symptoms, and of pointing out those remedies which suc-

cacied best in its cure, has been given to Dr Home of Edinburgh.

Cynanche Trachealis is confined in its attacks to early life. Children from the first to the fifth year (particularly the ruddy and robust) are more frequently affected by it: it has been known to affect children within the month, and even adults are not beyond its reach: the latter cases are extremely rare, so much so, that the disease may be considered as confined to children, and may with propriety be classed among the diseases incident to childhood

It is I believe generally admitted that our disease is not contagious, although it may prevail as an Epidemic at certain seasons of the year. One peculiarity in the disease before us is, its being endemial to some particular places and confined to very narrow limits." This is proved by the fact, that at Edinburgh it is hardly ever known, while at Leith it prevails to a great degree: in Baltimore it is scarcely ever seen, whilst Fells-Point which is only a small

distance from the city is desolated every succeeding Spring.

This disease would appear as if it was hereditary to some families, whilst others who are placed in precisely the same situation, escape its attacks. Children who have been once affected with it, are peculiarly liable to a return of the disease on slight exposures to cold, and a second attack is considered lighter than the one which preceded it.

Having thus briefly considered the history and nature of Cynanche Trachealis, I shall proceed to mention some of the most striking appearances which present themselves, on dissection of those who have died of this disease. A preternatural membrane is generally found to exist throughout the Trachea, and in some instances to extend itself into the Bronchiæ: it adheres but very slightly to the sides of the Trachea; so slightly indeed, that it can frequently be separated entire. The proper lining of the Trachea appears to be unaffected by ulceration and erosion, and vestiges of inflammation may in some cases be observed. The lungs sometimes

show no vestige of the disease, and at others are affected with inflammation resembling that of Peripneumonia Notha. This preternatural membrane according to Professor Dorsey's dissections, never so completely fills up the Trachea as to prevent breathing: he has always found the muscles of the Glottis and Epiglottis so much contracted, as to induce him to believe the difficulty of breathing arose from that cause.

Of the exciting cause. The most frequent exciting cause of Cynanche Trachealis, appears to be the application of cold: sudden vicissitudes of the weather appear also to favour attacks of this disease: hence the Spring and Autumn are the seasons in which it is most prevalent: low marshy situations, and those near the sea coast where there is a greater proportion of moisture in the atmosphere are thought to predispose to this disorder.

What effect a disordered condition of the Alimentary Canal may have in producing this disorder, I shall not pretend to determine: the strong sympathy which exists between it, and the other parts of the system, would

tend to give validity to this opinion. Underwood in his work on the diseases of children, enumerates this among the exciting causes of this disease.

Of the Proximate Cause. As regards the proximate cause of Cynanche Trachealis, not a little discussion has been entered into, every one who has ventured to advance an opinion disagreeing from those who preceded him. As this point has engaged the attention of the most learned of the Medical Profession since the origin of the disease, it would perhaps be considered as the highest presumption in me, were I to attempt to advance one: I shall therefore content myself by mentioning some of those opinions, which have appeared most plausible and which have entitled in their defence men of the soundest judgement and most extensive information.

The first which I shall mention is that advanced by Dr Home: he considered the origional seat of the disease, to be in the Mucous Glands of the Trachea: I shall quote his own words as cited by Dr Willson

"When there happens a very great secretion of this coagu-

table fluid from the Glands of the Trachea in children, they are either not sufficiently attentive or too young to spit it up: the thinner parts are carried off during expiration, which remainder is thickened and compressed by the obstruction, which the narrowness of the Glottis opposes to the exit of the air from a large canal: every circumstance encourages its concretion into a solid firm membrane, while the more internal parts of the mucous, continue still fluid, and the continual secretion of more, keeps it seperated from the parts below".

Others have coincided with Dr Home's opinion, and considered the membrane formed by the excitement of the Glands of the Trachea, as the cause of Cynanche Trachealis

Cullen thought the disease consisted in an inflammation of the Larynx, together with a spasmodic constriction of the Glottis, which last affection he considered "as the most troublesome and peculiar circumstance", as suffocation was produced, which prevented the common consequences of inflammation.

The late Dr Rush considered the disease to be frequently a spasmodic affection, and objected entirely to the spin-

ion, which attributed the disease to the preternatural membrane which was considered by him "as an adventitious circumstance supervening after the disease had lasted some time".

The opinion which our learned Professor of the Practice has delivered to us, is perhaps the most correct: he considers all cases which come on suddenly as partaking of spasm, which he proves by dissections of those who have died suddenly of this disease: upon examination no symptoms of pre-existing morbid action presented themselves: those cases where the symptoms show themselves slowly "and is the effect of gradually extending inflammation" he considers as inflammatory. Whether his opinion be received or not, the practice arising out of them, I think will be found more successful than any which has preceded it

Of the Symptoms. The symptoms of Bronchi Tracheitis may be divided into local, and those which attend other febrile and inflammatory diseases. To begin with the local symptoms; those which generally show themselves first are, a Dyspnoea, which sometimes arises suddenly, and as it increases, the breathing is performed with a wheezing, as if

the passage of air was straitened, the voice at the same time becomes very shrill, and is compared by many to a noise issuing from a brazen tube and to the crowing of a young cock: a cough always attends, the peculiar sound of which Dr Rush compared to the barking of a young dog, and relied upon it "as the best pathognomic sign of the disease before it was completely formed". If the patient can give an account of his feelings, he will generally complain of a sense of tightness and pain about the Larynx: the cough is for the most part dry, and if any thing be spit up "it has a purulent appearance and is frequently mixed with specks of blood". The Tonsils, Uvula and Velum Pendulum Palati are sometimes considerably swelled and inflamed, and the head is frequently thrown back as if to escape from suffocation. As the difficulty of breathing and the other symptoms increase the face becomes swelled and flushed and the eyes protuberant: deglutition is scarcely ever affected

These may be considered as the symptoms which more particularly designate this disease from the other Phlegmasia.

The symptoms of the general arrangement of the system are the following. The patient a day or two before the disease be com

plitity formed, appear sluggish and drowsy: as the difficulty of breathing increases, the pulse becomes strong, hard and frequent, the skin hot: thirst and restlessness prevail to a great degree. The bowels are for the most part costive, and the stomach is seldom affected with nausea or vomiting.

If these symptoms should not yield to the remedies proper in this stage, the pulse from being strong and hard, now becomes weak, tremulous and more frequent, the countenance is dejected and the face assumes a livid and purple colour.

Low delirium arising, the respiration hurried, small and still more difficult, the pulse tremulous, weak and so frequent as scarcely to be counted, and the extremities becoming cold, are sure precursors of a fatal termination

We may venture to give a favourable Prognosis, when the breathing becomes more free and less hurried, the rattling sound of the voice and cough ceasing, and the pulse becoming softer and less frequent.

Treatment

The symptoms of Cynanche Trachealis being so very alarming, frequently threatening the immediate death

of the patient, demand the most speedy, as well as the most judicious exertions of the Physician to combat them.

When called to a patient labouring under this disease the remedies which obviously present themselves as best calculated to relieve the most urgent symptoms are Emetics. These act by causing a relaxation of the Spasm of the muscles of the Glottis and Epiglottis, relieving pain, and in determining to the surface: these as well as all our remedies used in this disease, should be given in remarkably large doses, as the susceptibility of the stomach to the impression of Medicines is greatly impaired.

Among the various Emetics which have been employed by practitioners, the Emetic Tartar appears to have been most confided in: it is much more certain in its operation, and also leaves a much more lasting impression upon the system: the safest and the most usual manner of exhibiting this medicine is in divided doses, repeated at such intervals, as the urgency and violence of the symptoms, may indicate.

Children from two weeks to two months old, may take

two grains, dissolved in sixteen tea-spoons full of warm water, one to be repeated according to circumstances. Exhibited in this way we shall seldom have cause to be otherwise than pleased, with its effects: a child two years old may take half a grain.

At the same time that we exhibit the above remedy, we should place the patient in a warm bath, and continue him therein for ten, fifteen or twenty minutes: this is a most usefull remedy: it promotes the operation of the Emetic, equalizes excitement, and has of itself in many instances entirely removed the disease. The warm bath I am inclined to believe would be found a no less usefull remedy in many other diseases of children, in which it is seldom or never resorted to.

The disease will sometimes yield to these remedies: if however we should be disappointed, we should next resort to copious venaesection and a repitition of the Emetic and warm bath. The good effects we are to anticipate from venaesection are the following: in preventing the fatal termination of inflammation, abating the febrile

symptoms, and in preparing the system for the reception of other remedies, which are to follow its use: if the disease is owing to spasm it is no less useful in effecting its relaxation

The attack must be extremely obstinate if it should still resist these remedies. Cases however are not unfrequent which will not yield: yet we should not be induced to give up the case as desperate, and stand idle spectators, whilst there remains the least glimpse of life: our disappointment should but stimulate us to redoubled exertions and to call up to our aid the utmost resources of our profession. Topical depletion by means of cups and leeches would perhaps effect our purpose, and the application of a blister large enough to extend from ear to ear, would at this time be of eminent advantage: this last remedy appears to operate on the principle of revulsion, exciting inflammation on the external parts, and thereby relieving the more deeply seated.

Yet even these additional applications will sometimes be found of no avail, and to our great mortification, we find the disease gaining upon our patient with rapid

tricks. In this embarrassing and critical situation, we are advised to bleed ad deliquium animi: when carried to this extent we are assured, that it never fails to produce immediate relief. Pushing the lancet to this extent would seem to many the height of madness, and the patient would by them be considered as irrevocably lost. Yet if they would take into consideration the great tenacity which children have been observed to display for life, they would doubtless consider this apparently rash procedure, as the only alternative left, by which life could be preserved.

"Children have been found alive upon the breasts of their mothers, who had perished of cold: they resist contagion better than adults, and recover sooner from contagious diseases: from injuries and surgical operations their recovery is more rapid: they are likewise better able to bear the operation of the most powerfull medicines. It is well known that during the growth of the human body, the proportion of fluids far exceeds that of the solids, and on account of the fullness of the vessels of children, they are extremely liable to inflammatory diseases of this kind,

and therefore often require venaesection".

I have never seen a case where the symptoms have not readily yielded to Emetics, warm bath, blisters, and moderate venaesection: yet I should not hesitate a moment bleeding to the extent advised, if required.

It is I am convinced owing to the mistaken idea of children being unable to bear the operation of powerfull and efficient remedies, that this disease has proved so fatal and has been numbered among the Opprobria Medicorum

The disease being by the above remedies completely broken down, we are next to resort to purgative medicines in order to carry off its lingering remains. Of this class, Calomel is most generally employed, and is certainly preferable to any of its hundred articles. In such high estimation has it been held by some, that it was relied on, as the only sure and effectual remedy in combating Cynanche Trachealis.